

(3) Remarks

Claims 1-12 are now present in the application.

No claims have been added or canceled, but the dependencies of claims 5 and 7 – 11 have been amended.

Telephone Interview

At the outset, applicant and his representative would like to thank the examiner for the courtesy of the interview conducted on September 23, 2009. The arguments presented below are the substance of those presented during the interview. No agreement was reached as to claim language, but distinctions between the present invention and the sole cited reference were pointed out.

Specification Objection – 37 CFR 1.77(b)

The examiner objected to the specification for lacking suggested headings; however, applicant wishes to defer amendment until allowable subject matter is indicated.

Claim Objections – 37 CFR 1.75(c)

The examiner objected to claims 5-11 as being in improper form due to the presence of multiple dependent claims dependent on multiple dependent claims. The claims have been amended to eliminate this informality, and examination of all claims is now in order.

Claim Rejections – 35 USC §102(b)

Claims 1 through 4 and 12 stand rejected under 35 U.S.C. §102(b) as being anticipated by US Patent No. 4,936,709 to Kimura.

The Office Action states that Kimura '709 discloses all of the limitations of the claimed method at column 6, line 59 through column 7, line 30. This rejection is respectfully traversed.

It will be recalled that the invention provides a method for determining the propulsion force, its eccentricity in relation to the neutral axis and/or the advance direction of a series of pipe elements, wherein a pressing device applies force to the pipe elements and the faces of fluid-filled expansion elements arranged in the joints between the pipe elements. The invention enables controlling the propulsion force, including its eccentricity and advance direction. The invention enables controlling the

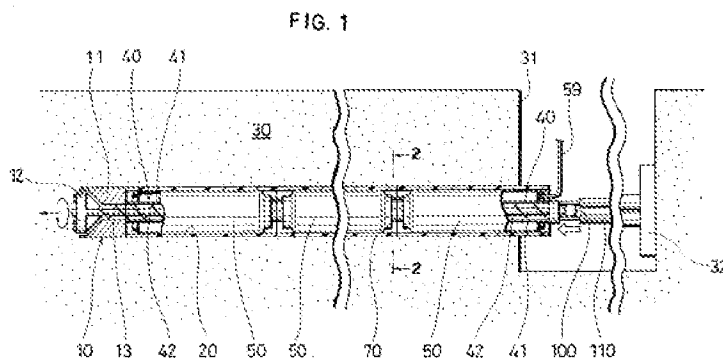
advance of the pipe elements along an intended path and permits anomalies to be identified and corrected. Thus, the invention has applicability to heavy-duty pipe (using its strength to transmit the advancing force) and to laying pipe along curved paths.

The device and method of Kimura are very different in structure and function.

Kimura discloses an apparatus for propelling pipes to be laid in the ground in a propulsion pipe-laying method (column. 1, lines 8-10). An object of Kimura is to realize continuous pipe-laying over a long distance without causing damage for pipes to be laid even if the pipes have a low bearing force (column 2, lines 40-45).

According to Kimura, pipes to be laid are rigidly supported by a supporting device mounted on propulsion shafts at the internal surface from the inside and the propulsion power is supplied through the propulsion shafts (column 2, lines 47-53). The pipes of Kimura are rigidly supported from the inside by propulsion shafts and even if pipes are jointed in a long series, the propulsion power can be transmitted to the intermediate pipes in the series of pipes through propulsion shafts arranged therein (column 3, lines 16-20). The force is not transmitted by the mating edges of the pipe sections as done according to the invention, but by the propulsion shaft 40.

The propulsion power does not occur in a concentrated manner on the head of leading pipe in a series of pipes (column 3, lines 21-24). According to Kimura, a collar 71 is composed of the same material as the pipes to be laid 70 is inserted at a joint connecting the newly laying pipe 70 and both of the pipes 70 are connected to each other by means of adhesion or heat-welding (column 7, lines 12-17). The straight tunnelling of tunnel 20 is checked by determination an accurate position of the excavation means 10 and for this purpose a laser may be beamed through the target collimation passage (column 7, lines 51-59).



In contrast to the invention, no method is disclosed by Kimura for determining the propulsion force, its eccentricity and/or the advance direction on advance of pipe elements.

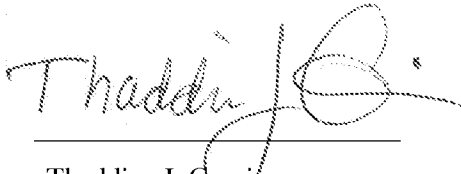
Moreover, Kimura has no fluid-filled expansion elements arranged in the joints of the pipeline, but the expansion members described there (e.g., 50) function to apply force between the propulsion shaft and the inside wall of the pipe.

Importantly, Kimura provides no measurement of fluid pressure and/or deformation of the joints for the purpose of calculating the propulsion force and its eccentricity.

While no rejection has been made under 35 USC §103, it is clear that a person skilled in the art would not find any guidance for modifying the apparatus disclosed in Kimura in order to obtain the apparatus according to the invention.

Applicant has endeavored to place the application in condition for allowance, but if for any reason the examiner sees need for formal changes, she is invited to call the undersigned. Accordingly, reconsideration and allowance of all claims are believed in order and are requested.

Respectfully submitted,



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